AN

ESSAY

CONCERNING

Peſtilential Contagion:

Occaſioned by the

DISTEMPER

Now Raging among the

CATTLE.

WITH A

METHOD propoſed to prevent its PROGRESS.

177

By R. DAVIES, M. D.

Quid labor aut benefacta juvant? quid vomere terras
Invertiſſe graves? atqui non Maſſica Bacchi
Munera, non illis epulæ nocuere repoſtæ:
Frondibus et victu paſcuntur ſimplicis herbæ:
Pocula ſunt fontes liquidi, atque exercita curſu
Flumina: nec ſomnos abrumpit cura ſalubres.

VIRG. Geor. III.

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ADVERTISEMENT.

THE following Tract was first published in the Year 1748, *when the Distemper was raging upon the Borders of* Shropshire, *where the Author then resided. The Manuscript had been perused and approved by Dr.* Mead: *By his Direction it was printed, and presented to the Right Honourable Members of the* Privy Council. *It met with the same Fate as the Endeavours of many other worthy* Physicians *at that Time. The Government proceeded upon a Scheme directly opposite to that herein proposed; but with so little Success, that after twelve Years Experience, and ineffectual Endeavours to stop it by the Slaughter of an infinite Number of Cattle, the Distemper still continues, and has now broke out fresh in* Somersetshire, *to the imminent Danger of all the Western Part of the Kingdom. Nor can they place any Confidence in the present Mitigation of the Distemper during the Summer; it having been predicted in this Tract, and constantly experienced since, that the Infection would cease in a great degree upon the Approach of Summer, and spread again in Winter. It is upon the Credit of his Predictions, which have been fatally verified by the continual*

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ADVERTISEMENT.

Progreſs of the Diſtemper thro' different Parts of the Kingdom for theſe twelve Years, that the Author preſumes to offer this Tract again to the Conſideration of the Public: Nor is he yet afraid to ſtake his Reputation upon this Iſſue, That the Progreſs of this Diſtemper may by prudent and judicious Care be ſtopped in a few Months Time.

Opinionum commenta delet dies: Naturæ judicia confirmat. Cic.

Bath, June 15, 1757.

R. DAVIES.

AN

THOUGHTS
CONCERNING
Peſtilential Contagion.

PART I.

THE Diſtemper has now raged among the Cattle of this Kingdom for three Years paſt, and ſtill continues its Progreſs with great violence. I am informed that 135,000 pounds has been paid out of the Treaſury this laſt Year in recompence of the Cattle killed, according to the preſcribed Orders, and that they ſtill continue to pay 11,000 pounds *per* Month. So that upwards of 80,000 Cattle have been killed in one Year, and 7000 are ſtill killed *per* Month; beſide the very great Numbers that die of the Diſtemper and are not taken into this Account, becauſe the Owners

have not comply'd with the Orders of the Government.

The Orders of Council have chiefly related to the Sale and Removal of Cattle; the guarding Lines between the healthly and infected Parts of the Country; and the killing and burying all Cattle as ſoon as infected.

There is a ſeeming Probability that theſe Regulations would have proved ſufficient to have ſtopt the Infection while it was confined to a few Places only, had theſe Orders been every where duly carried into immediate Execution; but ſince, thro' Failure thereof, it has now laid hold on moſt Parts of the Kingdom, the ſame Succeſs can hardly be expected at all; or, at leaſt, without much better Proviſion is made for their Execution, than by leaving it to the Juſtices at large. Few will be active in attending a Charge to which they are not particularly appointed, and where no one can be particularly blamed for Neglect.

There is alſo another Method of ſtopping Contagion, which ſeems to have been ſtill leſs attended to, *viz.* a judicious Enquiry into

into the Nature and Symptoms of the Diſtemper, its Stages and Progreſs; together with all the Light that can be procured by Diſſection, into its Seat and Appearances; and, upon this Foundation, to form a rational Proceſs of Cure, ſteadily to be purſued, with a View to mitigate the Diſeaſe in Individuals, as well as its infectious Quality to the Species; and alſo to find the moſt rational Treatment of the Sound, in order to their Preſervation.

Among the different Peſtilential Diſeaſes that at ſundry Times have ravaged Mankind, ſome have continued their Fury for upwards of fifty Years, as the Plague at *Conſtantinople* in *Juſtinian*'s Reign; while others have been extinguiſhed in a few Months, as the Plague at *Ferrara*, and the Plague at *Hanover* in 1712. To what can the different Length in the Reign of one and the ſame Diſtemper be attributed, unleſs to the different Methods of Cure and Preſervation eſtabliſhed by Phyſicians and Legiſlators? And how great a Glory muſt this reflect on the Memory of his late Majeſty, by whoſe auſpicious Conduct perhaps the whole Body of the *German* People were

preſerved from a general Deſolation! Now, under any Treatment whatſoever, all Infection muſt at laſt be conquered, if it be conquered at all, by the gradual Mitigation of its Violence, and, conſequently, of its contagious Malignity. For the Sick have never been abſolutely abandoned, even among the moſt ſavage and barbarous Nations; and the neceſſary Attendants upon the Sick and Dead muſt for ever be ſufficient to propagate the Diſtemper.

The Public was aſſured, about two Years ago, 'that ſome generous Phyſicians, in '*London*, had ſet on Foot a weekly Meet-'ing to conſult about a Remedy for the 'Diſtemper then raging among the Cattle 'in the Neighbourhood of that City.' An Enquiry into the Nature of ſo extraordinary a Diſtemper might well be expected from the Curioſity of ſo learned a Body of Men; and the Publick might hope for ſome Fruits of their Enquiry that would prove of general Advantage. But nothing of that Kind, that I know of, has appeared; and 'tis eaſy to conceive what Diſcouragements or Diſappointments they might meet in their Reſearches, when unſupported by any Authority

thority to aid their Enquiries or enforce their Directions. So that Curioſity would be ſtopt ſhort in its purſuit of diſagreeable Objects, when it was not like to be productive of publick Benefit, or private Advantage.

The firſt Information I had of this Diſtemper was from a Pamphlet writ by a Member of the College of Phyſicians; whoſe Method (as himſelf aſſerts) was attended with remarkable Succeſs as far as it had then been tried; for 'of all thoſe 'who had been properly treated during 'the firſt Stage of the Diſeaſe, the greateſt 'part did recover, without undergoing 'any bad Symptom whatſoever, or being 'more affected than they are in a common 'Cold: two parts in three of thoſe which 'were treated early in the ſecond Stage 'did likewiſe recover, and about one in 'three of thoſe that were treated later in 'that ſecond Stage. But in the laſt Stage 'Remedies of all Kinds were in a great 'Meaſure ineffectual.' This Gentleman unfortunately happen'd to entertain an Opinion, that the Diſtemper was not *Infectious* but *Inflammatory* only. This gave

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ſo general a Prejudice againſt all he had advanced, that his Directions have been little regarded by the Publick, and yet the Diſtemper or it's Method of Cure as to Individuals are not affected by its being infectious or not, tho' in Reſpect to the whole Species it is of the greateſt Moment to diſtinguiſh. The Diſeaſe had but newly appeared when this Tract came abroad, becauſe the Diſtemper call'd for a ſpeedy Remedy: Had there been Time allowed for making more Obſervations, the Sagacity of the Author leaves us no Room to doubt but 'his Treatiſe had been made more 'compleat.' Perhaps ſome eſſential Symptoms had not yet appeared, or at leaſt not been obſerved; particularly, whether it reſembled the Peſtilence firſt brought into *Italy* from *Dalmatia*, in thoſe Eruptions or Abſceſſes that covered the Body like the Small-Pox, and was the characteriſtic Mark of the Diſeaſe of that Time, nor do I know if it is yet determined, whether the preſent Diſeaſe has or has not that eſſential Character; altho' the Public are directed to kill the Cattle as ſoon as ſeized, without ſo much as a *Symptom* aſſigned to diſtinguiſh

the

the Diſtemper by. And how frequently muſt the Trade and Peace of a Neighbourhood be injured by injudicious Suſpicions?

It is well known that Diſtempers do uſually begin with Malignity, and yet, under proper Regulations, do in proceſs of time become mild and tractable. A Method therefore once prudentially directed ſhould not be haſtily forſaken becauſe unſucceſsful in the firſt Attempts.

I muſt obſerve, that nothing has more diſappointed the Cure of the Sick Cattle than the many incongruous Remedies boldly recommended in the public Papers for certain Cures; in reliance upon which all attention to a rational Treatment has been diſſipated. And I find it an Obſervation of the Graſiers, that more recover when left to themſelves, than when moſt induſtriouſly tamper'd with, for Nature is always a better Director than an officious Pretender.

Since the Diſeaſe has now nearly left the Confines of *London*, where ſo many judicious Phyſicians reſide, without receiving a Check from their united Endeavours, 'tis not likely to find Phyſicians in the Country of Leiſure and Abilities equal to ſo difficult

a Taſk; nor have they Authority and Reputation ſufficient to introduce any Scheme into general Practice. And much leſs is to be expected from Beaſt Leeches and their random Proceedings.

I have already obſerved, that the ſtrict Execution of Orders cannot be expected from the Juſtices at large; nor can the Privy Council, while employed in ſo many momentous Affairs of State, give due attention to all the Particulars of an Affair of ſo intricate a Nature, on a due Conſideration of all which the Regulations ought to be enacted.

Tis more than probable that ſome Orders, not ſufficiently conſidered, and found inconvenient in Practice, might give occaſion to a negligent Execution of the whole by the Juſtices, and that the Diffidence of Farmers, not knowing how to approach the Throne for the Allowance for their Cattle killed, might put them upon various Attempts to recover the Infected.

The putting a ſpeedy End to the Infection is a Matter of the greateſt Conſequence to this Kingdom, and cannot be purchaſed by too much Care or Expence

pence. I therefore beg leave humbly to propoſe,

Firſt, That a *Board* of *Health* be appointed, conſiſting of Noblemen, Gentlemen, Divines, Phyſicians, Lawyers, and experienced Officers of the Army; to be provided with Clerks experienced in the Buſineſs of Offices, to attend this one Affair, to receive and compare Informations, publiſh regular Accounts of the Diſtemper, form all Regulations, and ſuperintend their Execution.

Secondly, That the Execution of all Orders of the *Board* of *Health* be intruſted to the Lords Lieutenants in every County, and by them delegated to a Board of Lieutenancy, conſiſting of the greateſt landed Gentlemen, to whom all Juſtices, Phyſicians, Surgeons, *&c.* ſhall be aſſiſting: By this Board all Guards, Inſpectors, *&c.* to be appointed: The Certificates of Juſtices for all Cattle killed, to be examined and allowed, and, upon the Approbation and Order of the Board of Health, to be paid by the Receivers-

General to the Graſiers. The ſame Board to diſtribute Rewards, inflict Penalties, and regularly tranſmit to the *Board* of *Health* Accounts of their own Proceedings and of the State of their Counties in all Matters relating to the Infection.

To begin in a good Method obviates the Difficulties of moſt Undertakings: It will be almoſt needleſs to mention the Advantages that may be expected from this Polity. But I will take the liberty to obſerve,

Firſt, that the whole Kingdom being formed upon the Model of a well regulated Army, there can be no failure of Execution, the blame whereof may not be imputed to ſome particular Perſon.

Secondly, That diſtinct Committees may be appointed, of Gentlemen, Officers, Phyſicians, or Lawyers, *&c.* to regulate all Matters relating to their reſpective Profeſſions.

Thirdly, That all Lines directed to be guarded upon Rivers, *&c.* being committed

mitted to the Care of the Lords Lieutenants in the ſeveral Counties, will by them be divided into leſſer Diſtricts, and each intruſted to the Care of particular Perſons.

Fourthly, That all Perſons whatever will be aſſured of the Rewards due to their compliance with Orders, and of immediate puniſhment in caſe of Tranſgreſſion.

Fifthly, That it will be of material Service for the Board of Health to lay conſtantly before the Public, authentic Accounts of all places infected, with the Numbers that die and eſcape, digeſted in a regular Bill of Mortality; the Sums paid by the Public for all Cattle deſtroyed; the moſt reaſonable Conjectures of all the means by which Infection is conveyed from place to place; together with the Obſervations made by any intelligent Perſons relating to the Diſtemper and its Cure.

Sixthly, It may have no immaterial advantage if no Perſon be permitted to print

or publiſh any Matter relating to the Infection, otherwiſe than by Licence from the Board of Health, excepting local Orders by the Board of Lieutenancy: But Summaries of all Orders or Papers publiſhed by the Board of Health, ſhould be conſtantly inſerted by all News-Writers in their ſeveral Papers.

The Author of this Schedule hopes the Importance of the Subject will apologize for a Country Phyſician propoſing Regulations to the *Great Council of State*, in an Affair nearly related to his own Profeſſion. The haſte in which it was neceſſarily to be offered, at a time when the Infection had already reached within five Miles of the *Severn*, but had not yet appeared on the *Weſtern Side*, will be a ſufficient Excuſe for any inaccuracies. For the fate of all the Cattle of ſeveral breeding Counties does immediately depend on the ſpeedy Execution of ſome effectual Method. Since, if it cannot be checked at the Banks of ſo large a River, there can be no proſpect of confining it within any leſſer bounds than the Seas, and probably not of them.

He

He is further urged to this haſty propoſal of his Thoughts, by obſerving in the *Gazette*, that the Privy Council have the whole Affair under Conſideration, in Order to new-model their Regulations; and he hopes, at leaſt, to give ſome new light to a Subject which had, for ſome time, engaged his deepeſt Attention; altho' the little time he could allow himſelf to commit his thoughts to paper muſt deprive them of the advantage, he ſo much recommends, of due Order and Method.

I beg leave to refer the Curious to *A ſhort Diſcourſe concerning Peſtilential Contagion, and the Methods to be uſed to prevent it*, written during the Plague at *Marſeilles*, at the Inſtance of our own Adminiſtration, by a *Phyſician*, who ſtill lives the great Ornament of his Profeſſion, and, after a Life ſpent in generous labours for Mankind, is perhaps ſtill lent to us by Providence, to direct a Work he well knows to accompliſh; and by thoſe very Rules, contrived with no leſs Humanity than Prudence, which graced the Adminiſtration of a *Craggs*, in guarding this Nation from the *Marſeillian* Plague, he ſhall ſtill add luſtre to that of a *Pelham*; and

upon

upon the full Exertion of all thoſe Meaſures with exquiſite Wiſdom contrived to extinguiſh the *Plague* itſelf, his Judgment ſhall gain the Teſtimony of *Experience* to the Truth of his Rules, and his Humanity receive a no mean Gratification in *ſaving the Cattle of a Kingdom.* And when he late goes to receive the Reward of his virtuous Labours, this his Treatiſe will tranſmit his Name to Poſterity, and unborn Nations ſhall owe their Security from this greateſt of Calamities to that ſublime Genius, who has diſcovered the true Source of *Contagion*, and taught Mankind to meet and ſubdue its Fury. Then ſhall Time collect all the Honours due to Learning, Judgment, Integrity, Humanity, and all the united Accompliſhments which conſtitute a conſummate Phyſician, to adorn the Temple of an *Engliſh Æſculapius.*

Sic præivit
Hippocrates, meruitque Cælum.

March, 19,
1747.

THOUGHTS

CONCERNING

Peſtilential Contagion.

PART II.

THE dreadful nature of Peſtilential Diſeaſes made them conſidered in very early times as divine Judgments, ſent down from Heaven upon Mankind. Nothing could be more terrible than this Scene, when viewed through the medium of Superſtition; and no Practice too horrid to have been introduced into it. Had every Creature, thus ſuppoſed to be ſtruck with the Shafts of divine Vengeance, been ſacrificed as Victims to appeaſe the wrath of angry Deities, it would have appeared agreeable to the barbarous Genius of ſuperſtitious Ages.

All

All national Calamities undoubtedly ought, in a religious light, to be conſidered as publick Viſitations of Providence. But I muſt leave thoſe Conſiderations to the Perſons whoſe Province it is to enforce them. It is the Office of my Profeſſion to enquire out the means of ſtopping the Progreſs of the Diſtemper. But it muſt be remembered, that no human Means will be permitted to take effect, that are not perfectly agreeable to the *divine Laws*. The *God* whoſe tender Mercies are over all his Works, who pitied the People of *Nineva*, and even their *Cattle*, will not permit that Man ſhould delight in Cruelty. He hath given him Dominion over the Beaſts of the Field; but to be their God, their Saviour and Protector, not their cruel Tyrant and Deſtroyer. Cannot God alſo viſit Man with Peſtilence? And how ſhall he be treated who hath himſelf ſhewed no Mercy? This Argument hath been very elegantly treated by ſeveral Writers, both in Proſeand Verſe; and if it does not come home to the Boſoms of my Readers, I am willing they ſhould impute it as a Solæciſm to the Writer.

The

The Author would not be underſtood to mean that we have not a right to kill a few Cattle, a hundred ſuppoſe, while it is probable that a general Infection may be prevented by the Death of thoſe few. But when ſome hundred thouſands have been thus killed or died under ill management, and while we may yet ſay with the Poet,

Alitur vitium vivitque tegendo,
Dum medicas adhibere manus ad vulnera
Paſtor
Abnegat, et meliora Deos ſedet omnia poſcens:

it is then high time to think of a different treatment. And if I can prove that God has not left us deſtitute of means, which if rightly applied would put an end to the Contagion, my argument then remains in full force.

Philoſophers have always conſidered Divine Judgments themſelves as the Effects of Natural Cauſes, exerted in an unuſual degree of Force; and in this view, the proper remedy is (the Moral Cauſe being firſt obviated) to apply to the ſtudy of thoſe Natural Cauſes; and though theſe are often

unſcrutable, yet by their viſible effects we are enabled to trace up to the Source of the Malady, and ſo far inveſtigate it's nature, as to apply the appoſite Remedies; and theſe are alſo to be learnt by philoſophical enquiries into the nature and properties of all things which we have in our power to apply; by judicious enquiries ſomething is ſure to be learnt continually; Practice will be every day regulated and improved; the beginning of the Diſtemper better aſcertained, when Remedies have the greateſt Effect, and are often ſufficient to bring a diſtemper into a tractable Form, which would, if left to itſelf, become in a few days mortal, and perhaps infectious. In the mean time a due treatment of the ſound, would bring them into a ſtate leſs ſuſceptible of Contagion. All this is the proper office of Phyſic; and there never was an age or nation in which Phyſicians were better ſkilled in the operations of Nature. If this paper gains not credit enough with our Governors, to procure the enforcement of Regulations plann'd by Phyſicians; it will I hope in ſome meaſure ſerve to vindicate the honour of the Faculty, that the Body of

Phyſicians

Phyſicians wanted not abilities, had they been properly called upon to exert them, ſufficient to have checked an Infection, before it had committed ſo great a devaſtation in a healthful Climate.

It can be looked upon as no common degree of Infatuation in our Country, that in all this time we have not properly ſought help either from *the* LORD *or the Phyſician.* All regular attempts fell early into diſrepute; and probably the Gentleman whom I mentioned in my former paper might think his pains in this affair more likely to injure than advance his Character, as a Phyſician, and therefore deſiſted from his Enquiries, while men no way qualified by their Education to inveſtigate the Nature of a Diſtemper, or adapt to it a natural proceſs of cure, have preſumptuouſly recommended to the public a reliance on ſome ill-contrived Receipt, neither founded on Reaſon or Experience.

As long as uſeful Learning ſhall be held in any Eſteem, the laſt Age will be celebrated for its diſcoveries in Philoſophy; and as Phyſic has always taken the Mode from Philoſophy, ſo in this Age ſhe is

making fast advances towards the perfection of a Science. Throwing aside the chimerical Hypotheses which disgraced the art, during the reign of the *Cartesian* System, she is now laying a firm Foundation in Experiment, and building thereon a regular Superstructure by the Rules of Reason and sound Philosophy.

It cannot but appear strange that in an age so full of Light, men should be so much infatuated and in love with darkness. The most impudent Quackish pretences have one after another been received and encouraged by the public. I will not stain my page with the Names of knavish Impostors and their extravagant pretences. For I should blush to name, and I tremble to think of the barbarities and murthers I have been eye-witness of, committed, some of them, under the Sanction of Royal Authority and Patents.

But I cannot forbear taking some notice on this occasion of one Gentleman, who by the reputation he had acquired in polite Literature, has advanced himself to the first Honours of his own profession; out of which he thought it his duty to step, in order

order to recommend a Medicine both as a Cure and Preſervative to the Cattle (though he had never once ſeen the Diſtemper) which was to ſuperſede the neceſſity of all other Remedies, even of Bleeding, which in the opinion of all Phyſicians is a neceſſary treatment of all Inflammatory Diſtempers; and this without doubt is a moſt violent one. This pious Gentleman might be encouraged to recommend a Medicine to Cattle, which in his great humanity he had enjoyed the ſatisfaction of bringing into general uſe among Mankind by his own Recommendation; and to have been the means of relieving many grievous diſorders: and the blindneſs attending partiality had prevented him from ſeeing the miſchiefs reſulting from the promiſcuous uſe of ſo powerful and active a Medicine.

I come now to open my argument with a view of the Contagious Diſtempers which have infeſted Mankind; for as their Natures have been better ſearched into, than the Diſtempers of Cattle, we have here a better foundation to build our Reaſonings upon. I ſhall begin my Obſervations with the Plague itſelf.

Grand

Grand Cairo is the great Seminary of the Plague; a populous, poor and dirty City, thro' the midſt of which paſſes a great Canal, which is filled with water upon the overflowing of the *Nile*, and after that River is decreaſed, is gradually dried up. Into this the People throw all manner of Filth, Carrion, &c. ſo that the Stench, which ariſes from this and the Mud together, is inſufferably offenſive: while the Mountains (at the foot of which the City is built) by keeping off the refreſhing winds, render the Air very hot and ſtifling. This gives an annual riſe to the Plague in this place, which nevertheleſs is annually ſtopt, when the *Nile* by overflowing, waſhes away this Load of Filth; and the cold winds ſetting in at the ſame time, lend their aſſiſtance by purifying the air. Now it follows from this account of the Riſe and Decline of the Plague in *Grand Cairo* itſelf, that when it is accidentally brought into any Country bleſſed with a cool and ſalubrious air, and guarding itſelf by cleanneſs from giving nouriſhment to the Seeds of adventitious infection, there muſt be reaſonable hopes of putting a ſpeedy End to the Contagion.

It is thus that the *Perſians*, the moſt cleanly people in the world, though their Country is ſurrounded every year with the Plague, yet ſeldom or never ſuffer any thing by it themſelves.

'Tis an obvious matter to account for the effects of a hot, ſuffocating, moiſt air, impregnated with Exhalations from putrifying animal Subſtances, that it ſhould contaminate the Blood of living animals, and give riſe to a putrid Fever. Here the Seeds of Contagion acquire a new degree of malignity; actuated by and actuating the *Vis Vitæ*; i. e. the Heat and vibratory Motions of Life, they may be propelled off from the Body in a ſtate of greater Energy, than perhaps is any way to be acquired, when unaſſiſted by Vital actions. Theſe Contagious Atoms may be attracted with a peculiar propenſity to the Bodies of animals, or may peculiarly affect thoſe of a particular Species; where by Fermentation they may generate new quantities of Infection, and thus produce new Scenes of the Tragedy. Electricity furniſhes us with Ideas and Examples of all I have here advanced. And I believe this Theory in its full latitude may be proved

not

not to be very remote from Truth. But it is ſufficient for my purpoſes, if it aſcribes to animal Infection all the force and malignity, which can with any pretence, or according to any Hypotheſis be aſcribed to it. It accounts for the propagation of Peſtilence from man to man as it were in a train, after it has got out of its native Air. Now tho' this be the Caſe, yet the Air may be ſo purified as to contain a leſs quantity of theſe Infectious Exhalations, and the bodies of Animals ſo prepared, as to receive the leſs injury from them. In this ſtate of things then the Diſtemper muſt abate; for an Animal receiving Infection in a degree not dangerous to its own life, will not generate Infection in a degree dangerous to other Animals equally prepared.

That a Body may be in a State inſuſceptible of Contagion is experienced frequently in Inoculation; where by too careful a preparation to prevent the violence of the Diſtemper, the infuſed Venom often fails to produce any Effect at all, or elſe ſome few trifling Eruptions which never riſe up to the nature of the genuine Small Pox. 'Tis alſo common to eſcape a great danger of natural

Infec-

Infection at one time, and to get the diſeaſe from a ſlight one at another. Nay the Plague itſelf has been eſcaped by perſons who for a long time together have been occupied in the hotteſt Scene of Infection.

Let us now bring the Theory I have here advanced to the Teſt of Experience, and ſee how far the Deductions I have drawn from it, are ſupported by hiſtorical Facts.

In my former part I hinted at the Caſe of *Ferrara*, when the Plague ravaged *Italy* in 1630. The Magiſtrates ſtopt the Plague in that City ſeven different times in one year, in none of which it went further than the Houſe it firſt ſeized. This cannot be attributed to the mildneſs of the Diſtemper at that time, for all the Inhabitants of the Houſe firſt infected being eight in Number died of it: beſide all the Country round was infected, and the ill Succeſs of their Neighbours Conduct induced them to take a different Method. Their Example was afterwards followed by other Towns in the ſame Territory with good Succeſs.

In 1657, when the Plague raged at *Rome* in the moſt violent manner and had ſpread itſelf both among Rich and Poor; Cardinal

Gaſtaldi was appointed Commiſſary General of Health with full Commiſſion to do whatever He ſhould judge neceſſary. And by the regulations which he ſteadily executed, he entirely cleared the City of the Peſtilence in two months time, which had continued in it almoſt two years. And it was particularly obſerved, that whereas before, when once the Diſeaſe had got into a Houſe it ſeldom ended without ſeizing the whole Family; in this management ſcarce five out of a hundred of the ſound perſons when removed from their Houſes were infected.

In 1712 the Plague invaded the *German* Dominions of his late Majeſty: but by the Regulations then eſtabliſhed was prevented from ſpreading beyond *Three Towns and Nine Villages*. The whole method then taken is printed entire at the end of the Preface to Dr. *Mead*'s Treatiſe on the Plague, who eſteemed it as a Paper well deſerving peruſal.

The Inſtances here recited are ſufficient to prove that the Plague itſelf, the moſt malignant and infectious of all Diſeaſes, would ſeldom or never have made that general havock among Mankind, if the ſick were judiciouſly and humanely treated, and prudential

tial methods taken to prevent the ſpreading of the Infection. Certain it is that the Plagues of *London* 1625 and 1636 acquired much of their violence by ill treatment; and abated very remarkably upon the diſcontinuance of ſome barbarous uſages.

Thus much ſhall ſuffice for the Plague; I will next conſider the nature of ſome other Peſtilential Diſeaſes.

The Sweating Sickneſs, or *Febris Ephemera Britannica*, is generally reputed to be a native of our own Iſland. It broke out about the year 1485, and returned five times in this Kingdom in the compaſs of 70 years; it alſo infeſted the *Netherlands* and *Germany*, in 1529; and what is very remarkable and wonderful, this Diſtemper, which was never heard of before this period, made its exit in 1551, and has ever ſince entirely diſappeared.

This Diſtemper in its ſeveral attacks made great devaſtation, and in ſome Towns where it raged moſt, half the Inhabitants of the vulgar ſort periſhed by it, as did many alſo of the Nobility and Courtiers. It ſometimes proved mortal in the ſpace of ſix hours, or even three, and few who died of it ſur-

vived the ſeizure above a natural day; in that reſpect being more violent than the Plague itſelf. And yet this dreadful Diſtemper is by the truly learned and judicious Philoſopher, the Lord *Verulam*, called, 'rather a *Surprize to Nature, than obſtinate to remedies*; for if it was well treated in time, the Patient cloathed warm and ſupported with temperate Cordials, he was *relieved by a Critical Sweat*, and in 24 hours commonly recovered. But multitudes were carried off ſuddenly, before this method of Cure and Regimen of the Sick were diſcovered.'

Caius, a great and learned Phyſician of that time, who reſided at *Shrewsbury*, where the Diſtemper broke out in a very furious manner, calls it a *Peſtilent, Contagious Fever* of one natural day: And with good Reaſon, for one can hardly imagine a Diſtemper making ſo dreadful a Progreſs through ſome Towns and Countries, and at the ſame time ſparing others, without concluding it *Infectious*. And yet the noble Philoſopher above-cited, than whom no one was a more curious and judicious obſerver of Nature, ſpeaks of it, as *not being one of thoſe Epidemic Diſtempers*,

Diſtempers, which are contagious and paſs from man to man; but that it took its riſe from a certain Malignity of the Air, an Indiſpoſition of the Seaſons, and frequent and unwholſome Changes of the Weather.

I mention this to mitigate the Cenſure of the Public paſſed upon a Phyſician, who in the beginning of the preſent diſtemper among the Cattle, publiſhed his Opinion of its not being *Infectious*. An Opinion very different from my own, and therefore what I am no ways concerned to defend; nor have I any knowledge of the learned Author other than by his judicious Writings. But curious men ſhould be indulged in the liberty of differing from each other in Speculations of ſo recondite a nature, as the whole doctrine of Infection certainly is.

All Epidemical Diſtempers muſt take their riſe, either from ſome general Intemperature of the Air diſpoſing Animals to be particularly affected, or to Contagion ſpreading from Animal to Animal by means of the Air. But the ſame diſtemper may be propagated by both theſe ways; nay an Infectious Diſtemper muſt be firſt generated in its native Air by ſome other method,

even

even the Plague itſelf; and the difficulty of aſcertaining by Facts in all caſes how a Diſtemper is taken, muſt neceſſarily divide Philoſophers in their Speculations. The noble Hiſtorian has not recorded the obſervations on which his own opinion was grounded; but ſome Inſtances muſt have appeared to Him of the ſame kind with thoſe which determin'd Dr. *Barker* to entertain the ſame opinion concerning the preſent Diſtemper of the Kine.

I will conclude this part of my Enquiry with an account of the *Peſtilent Angina*, a Diſtemper that raged at *London* in the Winter of 1739. The beſt relation I could at that time procure was as follows.

It began with a ſlow Fever and Soreneſs of the Throat, and generally in about 24 hours there appear'd a ſmall white ſpeck or two upon the Tonſils, which, if left to themſelves, encreaſed in number, grew livid about the edges, and running into one, formed a large ſlough all over thoſe Glands, and ſpread gradually over the Uvula, and all the Arch of the Throat. In a few days a Mortification began, and carried off the Patient before danger was thought on: for neither

neither the Fever nor Pain in the Throat were violent all this while.

The moſt ſucceſsful treatment of this Diſtemper was upon the firſt appearance of theſe white ſpecks to lance them deeply, to bleed plentifully at the Jugular Vein at firſt, and afterwards to bleed under the Tongue for two or three days together, to keep the belly continually open, to promote gentle Sweating, and to apply Bliſters: the Ulcers were to be dreſſed with Deterſives till the Sloughs ſeparated.

This Diſtemper prov'd fatal in many great Families; but the ſagacity of Phyſicians ſoon found out its Genius, and put a ſtop to its depredations. For ſince its Malignity conſiſted in a few Aphthæ, and their diſpoſition to mortify; an early knowledge of the Diſtemper was almoſt always ſufficient to prevent its danger.

This was not a new Diſeaſe, but is accurately deſcribed by *Aretæus*; under the name of *Ulcers of the Tonſils*; they were particularly incident to Youth. He diſtinguiſhes theſe, which he calls *unuſual, peſtilent and mortal*, from the *uſual and mild* Ulcers of thoſe Glands, which are ſmall, ſuperficial, and

and neither inflamed or painful, whereas the *peſtilent* ones are large, deep and ſordid, full of a concreted humour, which is firſt white, then livid and black: when the ſordid part ſloughs off, there appears a high Inflammation and Redneſs around, with a ſharp, burning pain, ſuch as attends the *Carbuncle*. The *Ulcer* ſpreads on all ſides, over the *Mouth* and along the *Aſpira Arteria* to the *Lungs*, and then the Patient is ſuffocated in a day's time. He deſcribes their death as a moſt miſerable Scene. The Patients are held in extream anxiety and uneaſineſs by the agonies of a burning, ſharp pain: it would be extreamly refreſhing to them to breath the cool air, but that is contaminated in its paſſage by the fetid Emanation of their *Ulcers*, ſo that they cannot bear their own Stench: their thirſt is as intenſe as if they were burnt with fire, and yet they dare not receive liquids in Dread of the pain, which terribly afflicts them, when the liquid preſſes upon the Tonſils, or regurgitates up the noſe. Thus they paſs their anxious moments in continual, fruitleſs changes of poſture, in lying down, and riſing up; but commonly they walk about, and becauſe no poſture affords

fords Eaſe, they ſtrive to relieve one pain by a new one. Their agony increaſes every moment, till their Voice fails, and they fall ſuddenly to the ground and breathe their laſt.

Aretæus diſcovers no ſuſpicion of this Diſtemper's being *contagious*: but aſcribes it to the uſe of *cold, rough, hot, acid and aſtringent* things in food: becauſe the Tonſils and Throat are particularly affected, by ſuch things in ſwallowing, and by their Steams riſing out of the Stomach. He judges that Youths are particularly liable to this Malady, becauſe they expoſe themſelves much to the cold Air, drink cold Water, are ungovern'd in their Appetites, eager in their Sports and warm in their Paſſions, which puts them upon ſtraining the Voice. Theſe Ulcers were familiar to *Syria* and *Egypt*; becauſe in *Egypt* the air is dry, the food various, conſiſting of acrid herbs, roots and ſeeds, their drink the thick waters of the *Nile*, or ſharp fermented Liquors made of Barley or Roots.

Aretæus's treatment conſiſted in methods common to all inflammatory affections of the Tonſils, in promoting *diſcharges of the Belly, bleeding, bathing, pulticing, fomenting, Ligatures, cupping*. What was peculiarly ne-

ceſſary to ſtop the progreſs of theſe ſpreading Ulcers, was the application of the moſt active Deterſives the Antients were acquainted with. He even makes mention of the application of *Fire* itſelf to the part affected; altho' in ſo confined a place, he ſpeaks of ſuch an attempt as bold and deſperate.

Severinus a *Neapolitan* Phyſician, who flouriſh'd about the year 1600, and whoſe works are now held in the higheſt reputation, prefaces his Deſcription of this Diſeaſe with all the direful appellations he could apply to the moſt terrible Peſt, or ſpecies of Divine Vengeance lighting upon Mankind; and ſeems apprehenſive leaſt it ſhould cut off the riſing Generation, ſo general was the deſtruction made among the Youth, to whom it proved peculiarly fatal. It began in the year 1618. *Spain* was firſt made ſenſible of its ſeverity: It then paſs'd to *Melita*, *Sicily*, *Sardinia*, *Hydruntum*, *Apulia*, *Calabria*, *Latium*, *and the whole Kingdom of Naples*: of which after a Reign of 22 years, it was in ſo full poſſeſſion, as to afford no proſpect of its Concluſion.

Severinus receives *Aretæus*'s deſcription, and only adds that the *Greek* Diſeaſe was exceeded

ceeded by the *Italian* in the acceſſion of many Symtoms affecting the Head, of which there is no mention in the antient Writers: He ſpeaks of two Patients that were *comatous and ſtupid*, and one *delirious* thro' the diſtemper; and ſays that all their Writers obſerved that *the Neck and Glands uſed to be ſwelled, or that an adematous Tumor uſed to extend itſelf over the upper part of the Breaſt. The Excretions of the Noſe were very putrid and mixt with Blood.* He obſerved two Forms of the Diſtemper, one acute and almoſt furious, another ſedate and ſlow, yet by no means void of virulence and danger. In the one *the danger continued to the 7th day*; in the other the Patients were worn away by a ſecret corroſion of the Aphthæ, and they died conſumptive by the 30th or 40th. But the moſt valuable part of his Hiſtory is the Diſcoveries made by Diſſection; an advantage, which, by the *Grecian* Superſtition, was denied to their Phyſicians. In the Heads of very many Bodies carried off by this diſeaſe were found large Grumes of Blood in the great Sinuſſes of the Dura Mater. In a boy of 7 years of age, the *Lungs were ſpotted, very livid and almoſt black. The pulmonary*

Veſſels and the Heart were diſtended with Blood; the Head and Face much ſwell'd by a yellow, mucous pituita between the Skin and the temporal Muſcles; the Veſſels in the Membranes of the Brain altogether loaded with Blood; ſo was the Rete mirabile. *The Larynx was covered with a cruſtaceous pituita, without any Sign of an Ulcer.*

Upon theſe Obſervations the Author forms his opinion of the Diſtemper; that altho' it was called from a very obſervable Symptom, *Ulcered Tonſils*; yet it was in reality, *a Mortification of the Brain of a peſtilent and contagious Nature.* It's contagious quality was ſufficiently proved by Experience, and was received by univerſal Conſent. Youths and all perſons who were full of Blood were chiefly affected by it. The warm, moiſt ſouthern Countries blown upon by the hot ſouth Winds, were its proper Climate: or as he better expreſſes it from *Ætius*, a rigid, cold Seaſon ſucceeding to a ſultry hot one is the genuine parent of this Diſeaſe.

Our Author tells us that his method of Cure differ'd widely from that in common uſe, being more conformable both to Reaſon and Experiment. He ſets out with this Indication

dication, that the Diſtemper attacking us, rather by *Malignity* than *Plenitude*, was to be oppoſed by *Alexipharmics* oppoſite to the nature of the Malady. With this view he recommends *Bezoar Mineral & Antimony Diaphoretic*, with ſome ſimple diſtilled Waters.

He next obſerves that the deeply ſeated Corruption of putrifying Humours was neceſſarily to be expelled by the ſtrongeſt *Cathartics*, ſuch as would act both upwards and downwards, and attract the Humours out of all parts of the Body. He recommends for this purpoſe an Infuſion *of Liver of Antimony*, as a very effectual and innocent medicine then in great reputation, and it was to be given as ſoon as poſſible in the Diſeaſe.

He directs on the next day to check the flux of Blood to the Meninges of the Brain, by *Bleeding at the Jugular*. The drawing Blood at a diſtance from the part affected, whether at the Arms or Legs, had been found in upwards of 20 years experience to be detrimental, by diſſipating the heat and ſtrength. He therefore recommends *one effectual Bleeding* from the Jugular, by which he mentions three Youths that were miraculouſly relieved in the judgment of an excellent Phyſician preſent.

preſent. This one effectual Bleeding is in quantity to be *a quarter, a third, or half a pound.* The place itſelf ſhews that it muſt be meant of an adult perſon, and he ſeems particularly cautious *againſt large or repeated Bleeding*, which he conſiders as dejecting the natural Strength. But he obſerves that ſeveral Youths were *cured by ſpontaneous Hæmorrhages at the Noſe*, after they had been relieved by this opening of the Jugular.

He mentions alſo Cupping and Bandages on the Limbs, by whoſe Swelling he aſſerts a Phlegmone will be deprived of its Blood and ſubſide conſiderably. He beſides commends the uſe of Clyſters, Bathings of the Feet, and Sinapiſms or Bliſters.

His local treatment of the Tonſils is the ſame with that of *Aretæus*, to *ſcarify* them deep; or even to *burn* them, if the importunity of Children, or waywardneſs of their Friends would permit it. For nothing checks *Putrefaction* ſo much as *Fire*. Among his applications he mentions his moſt favourite to be a *Balſam of Arſenic* deflagrated with *Nitre and Tartar*.

The learned Reader will pardon me if I have any where miſtaken the Sentiments of this

this ſagacious Obſerver, yet moſt abſtruſe and difficult Writer.

Altho' this Diſeaſe be uncommon, it is of no ſmall conſequence to be rightly underſtood; ſince its attack is violent, and it has ſometimes maintained a long and deſtructive reign. Beſide it ſerves to caſt a conſiderable light on the nature of Peſtilential Contagion; and the analogy I have obſerved between this Diſeaſe and the preſent Diſtemper of the Cattle makes it particularly neceſſary to enlarge upon this Subject.

We are obliged to *Aretæus* for a very faithful picture of the Diſtemper and fixing its true Seat. The *burning pain like the Carbuncle* is the diſtinguiſhing Senſation that attends a mortifying Eryſipelas, and explains the nature of the diſtemper, and wherein its danger conſiſts. The Cauſes generating the diſtemper, the perſons and countries particularly liable to it, are accurately aſſign'd. But 'tis very remarkable that this ſagacious obſerver of Nature had not ſeen inſtances to convince him of the *Contagious* property of this *Epidemic* Diſeaſe. We cannot ſuppoſe that the judicious treatment in

thoſe

thoſe times was ſufficient to prevent the Infectious quality of ſo virulent a diſtemper; tho' it may be allow'd to be capable very much to moderate it. And I muſt obſerve that his treatment was exactly the ſame with that of the common Quinſey, except in the local applications to prevent the ſpreading of the Ulcers. So little is the peſtilential nature of a diſeaſe to be regarded in its treatment.

The dangerous Nature of this Diſtemper conſiſted in a *gangrenous Eryſipelas* ſeated in the paſſages of the Breath: And does not its *Contagious* Nature alſo conſiſt in the ſame? The Eryſipelatous is of all Mortifications the moſt violent and acute, and conſequently its ferment the moſt active. And ſince there is in all Nature a great propenſity in every thing to generate itſelf, it is not probable that the putrid particles thrown off from theſe Aphthæ, will by fermenting with the fluids of other Animals generate a like diſpoſition to mortify in them? The paſſages of Reſpiration are the moſt deſtructive Seat of ſo baneful an Enemy. The Breath being every moment ſaturated with the Seeds of Contagion, taken up at its ſource they are then

then again received by other Animals, and depoſited in their proper *Nidus*. Bubos and Carbuncles are alſo mortifying Tumors, which ſhews that the Plague itſelf conſiſts in a gangrenous ſtate of the Fluids.

Fewer Children eſcape having the Meaſles while young, than do the Small-Pox; which ſhews it to be a more infectious Diſtemper, altho' it be not attended with any putrid Smell to indicate ſuch a Quality. It is no other than a ſimple Inflammatory *Eryſipelas*, whoſe natural tendency is to *Reſolution*, not *Suppuration*; and therefore is not dangerous. But the true Seat of this Diſtemper being the Lungs, its *Inflammatory* Seeds are propagated wide, and generate the ſame Diſtemper, when received by a proper Subject. The ſame is probable of the Gangrenous *Eryſipelas* of the Tonſils; from which alſo the Lungs are commonly affected.

What has been here advanced does in ſome degree account for the different Method by which different contagious Diſeaſes are communicated; why the Itch and *Venerea Lues* are not given but by contact

only, while the Meaſles and Small-Pox are propagated at a diſtance by the Air.

Now may we not infer, that a proper treatment of this gangrenous Quinſey which ſhall prevent its Mortification, ſhall at leaſt moderate the virulence of its Infection to the next perſon that ſhall catch it; and that if he alſo is early and properly treated, may not the Ulcers become ſtill more mild, and not *gangrenous* or *infectious* at all? If this be the Caſe, than may we not ſuppoſe that even in a Country where the nature of the Climate and manner of living of the Inhabitants expoſe them to frequent Inſults of this Diſtemper, ſo as to make it *Epidemical*; yet by the judicious treatment of Phyſicians it may be ſo ſoon mitigated as to afford few Inſtances of a wide-ſpreading Contagion? When the Plague firſt broke out at *Marſeilles*, it was ſtopt for a full fortnight by ſome meaſures then taken, and might probably have been wholly extinguiſhed, had not the unſeaſonable Confidence of the Inhabitants upon this intermiſſion given it new force. They would not believe that the Peſtilence had been among them, and even publickly upbraided the

Phyſicians

Phyſicians and Surgeons for frighting them cauſeleſly.

I will here inſert an Obſervation neceſſary to be attended to in all Contagious Diſtempers. That as the Venom of the Small-Pox lies quiet in the Blood after Inoculation for ſeven Days before it excites the Fever, ſo I have had opportunities of obſerving the ſame period after natural Infection, and alſo in the Meaſles. This may be called the latent Stage of the Diſeaſe; but my Obſervations are not ſufficient to determine the length of this Stage exactly, it being probably various in different Diſeaſes, and affected by ſome circumſtances in the ſame Diſeaſe. This Obſervation ſhews that infectious Diſtempers are excited by ſome Fermentation raiſed in the Patient. I may add that the Antients not having ſeen the Meaſles or Small-Pox, were little acquainted with *Contagious* Diſeaſes; which might be the reaſon why this was not obſerved to be ſuch by *Aretæus*.

We have hitherto been drinking at the clear fountain of Antiquity; but muſt now deſcend and taſte the impurer Streams that had been corrupted in their Courſe thro'

barbarous Ages, wherein falſe Learning and falſe Philoſophy had obſcured the genuine light which Nature diſplays to the obſervation of common Senſe.

I have obſerved that *Severinus* places the Seat of the Diſtemper in the *Brain*. He was miſled in this by Errors in the antient Syſtem of *Anatomy*, and by ſtill falſer Notions in *Phyſiology*. But this miſtake in *Theory* were pardonable, if ſome more pernicious miſtakes in *Practice* were not to be imputed to him. His notion of couteracting the *Malignity* of the Diſtemper by appoſite *Alexipharmics* is an Aphoriſm fatal to the lives of Multitudes; if this appoſite *Alexipharmic* was to be diſcover'd by trials of all the variouſly compounded Medicines, Galenical and Chemical, that had aſſumed that pompous Title. It does not appear how far our Author or his Contemporaries had eſſay'd the Virtues of theſe *Alexipharmics*. What after twenty years experience in this Diſtemper, he had learnt moſt to rely upon, was at leaſt tolerably innocent if not very efficacious: For after the Chemiſts had variouſly tortured *Antimony* to find *Alexipharmics*, *Catholicons*, *Panacæas*, &c. and obſerved

obſerved very pernicious effects from its powerful preparations, they took refuge in its *Calx*, which in the Judgment of *Boerhaave* has no effect at all.

He was hardly ſo fortunate in his choice of an Evacuant; an *Antimonial* Infuſion to act both as a *Vomit and a Purge*, given upon the firſt approach of a Diſtemper in which the tendency of the Fluids was manifeſtly to the Head, and this even before *Bleeding*, could not fail of encreaſing the tide of Blood to the part affected. Antimonials are of a very ſtrong and precarious Operation, and every one the leaſt verſed in practice knows with what violence the Veſſels of the Head are ſtrained by vomiting, and that it frequently forces the blood of weak perſons thro' the coats of the Veſſels and forms Ecchymoſes under the Eyes. We are not therefore at a loſs to account for the encreaſe of Symptoms about the Head, by which the *Italian* Diſeaſe exceeded the *Greek* *.

* *Græcanicæ morbi figuræ diſpar haud eſt Italica noſtra, niſi quod paulo auctior per Symptomata capitis, quæ minime recenſita veteribus hiſce ſcriptoribus viſuntur non infrequenter in noſtris hominibus male affectis.* Severin *p.* 527.

The

The drawing blood from the Jugular, is not directed till the day after the Vomit, which having forced the blood farther into the Capillaries, had probably then formed an incurable Obſtruction. It is plain that this Evacuation is in ſo trifling a quantity as to afford no chance of ſubduing a violent diſeaſe in its inflammatory State, unleſs Nature did the kind office by a *ſpontaneous* Hæmorrage. It muſt therefore advance in its full force, in oppoſition to all other remedies whatever, to its ſecond criſis and terminate either in *Suppuration or Mortification.* The latter is accompliſh'd in ſeven days, the uſual period of acute Mortifications; and if a kinder diſpoſition of blood brings on the former, the patient is perhaps only reprieved from a ſudden fate to linger on under the ſecret corroſion of Ulcers for the term of 30 or 40 days.

How bold and judicious ſoever our Author was in the Operations of Surgery, and happy in the topical Treatment, yet his *Balſam of Arſenic* muſt be a very pernicious Application; and add freſh fewel to the fiery nature of the Ulcers. Sure men have been miſled by ſome fatality into the uſe of this

moſt

moſt pernicious *mineral poiſon*, as an *Anti-dote* to the moſt malignant *Animal Diſeaſes*, the peſtilential Quinſey, and the Plague itſelf.

Severinus far exceeded all his Contemporaries in medical Abilities, and he tells us himſelf that his method of Cure differed widely from the common practice. It was alſo formed and corrected with the advantage of 20 years Experience in the diſtemper. We have reaſon therefore to fear that the Phyſicians of thoſe times lay heavier upon their Patients than the Diſtemper itſelf.

If then my Concluſion is true, that this Diſeaſe would continue to propagate its Contagion, as long as the Aphthæ were permitted to arrive at their *Gangrenous*, or highly *Ulcerous* State, we cannot be at a loſs to account for the long duration of the Diſtemper at that time.

All Phyſicians verſed in practice know that I have not aſcribed too great an alteration in the Nature of a Diſtemper to a difference in treatment only. The moſt violent Caſe I ever ſaw in the Small Pox, was in a florid young woman about the age of puberty, in whom before the Eruption of the Puſtules the Blood paſſed by every Secre-

tion

tion, and almoſt thro' every Pore of the Skin. No Medicine or improper food had been given. And this violent fuſion of the Blood was produced in a ſanguine habit by her being confined to bed in very hot weather dreſs'd in Flannel and kept in Blankets, all linen being removed according to the Cuſtom of her Country in that Diſeaſe; and I dare aver that a little too hot treatment at the time of Eruption will bring forth a Crop of Purples in any young and ſanguine Subject.

If we next take a view of this Diſtemper in its laſt Viſit at *London*, we ſhall find it left behind it few inconteſtable marks of its Contagion. The moſt ſagacious Phyſician might be ſurprized by the ſudden onſet of ſo furious a Diſeaſe; and the unhappy perſons firſt ſeized muſt probably fall a Victim to its rage. But when Phyſicians have taken a view of the Enemy and collected their forces againſt him, guided by the Obſervations of the Antients, enlighten'd by Anatomy, inſtructed by the miſcarriages of former ages, and experienced in the uſe of milder Drugs, they are able always to ſtop the progreſs of the Diſtemper, let its Malignity or Conta-

gion

gion be ever ſo great. Could *Hippocrates* give his Scholars proper Inſtructions to cure the Plague, and by ſending them into ſeveral parts of the Country procure to himſelf divine honours by putting a ſtop to the Contagion in *Greece*; while the knowledge of thoſe early times was confined to the narrow limits of a few Obſervations, which were not connected together nor able to bear the weight of any general Theory? And is this valuable Secret undiſcoverable by the *Engliſh* Phyſicians, who are the Deſcendants of *Harvey* and *Sydenham*, and enjoy the full Light which *Newton* pour'd upon all the Parts of Nature?

In all difficult attempts whether in Art or Nature, Philoſophy is our ſureſt Guide and Directreſs. Nothing is too hard for her to attempt. If ſhe can but place her Foot, the Earth might be moved, as the divine *Archimedes* expreſſes it. But if ſhe is chain'd down by Slavery, or blinded by Superſtition, her powers then like a mighty Engine ill directed, can only be exerted to the purpoſes of Miſchief. Thus perverted Reaſon deviates into the moſt extravagant Attemps in the cure of Diſeaſes, while ſimple Inſtinct is ſure

to give no obſcure Intimations of what is *beneficial* and what is *hurtful*.

Peſtilential Contagion needs no longer be view'd with a ſacred or myſterious Awe. It conſiſts in Animal parts thrown off in a volatile, putrid State. This Propoſition will always be true in its moſt general Senſe. The Nature of particular Diſtempers conſiſts in ſpecific Species of Putrifaction. Animal Putrifaction is moſt deleterious to Animals, live ones to live; and each Species of Animals is moſt deleterious to its own kind; for Contagion does not readily paſs from one Species of Animals to another, even tho' they are the Vehicle of Infection to other Animals of the infected Species. Nature by this gives us continual admonitions to Purity.

Nor are we left by Nature deſtitute of an Antidote againſt animal Contagion. *Acids* of all kinds prevent Putrification, and correct its Acrimony when formed. Volatile Acids will meet and conflict with the Contagious Miaſmata in their proper Medium the Air. The ſteams of Vinegar or the Acid water of Tar is very effectual; but the Vitriolic Acid is the moſt powerful Antiſeptic,

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and when diſtilled with a vinous Spirit it becomes highly volatile and penetrating, being greedily attracted by the Air and diſſipating therein. At the time of Maturation of the *Small Pox*, when of a ſudden the whole body becomes turgid and pours out at all its Pores the moſt rancorous Emanation, by which the Air becomes ſuffocating even to an healthy perſon entering the room, I have uſed to ſpend upon Tow large quantities of this *volatile Spirit of Vitriol*, by which the putrid Air becomes at once ſweet, cool and refreſhing to the languiſhing Patient; and as thus adminiſter'd it becomes extreamly ſalutary to him, ſo I cannot doubt but by medicating the Infectious Miaſmata it muſt greatly abate if not wholly deſtroy their Contagion to others.

In Diſeaſes of the Lungs the Air and Vapours may be variouſly medicated with great advantage as I have ſeveral times experienced. Which I mention here, becauſe I do not remember any applications of this kind uſually directed by Medical Writers; except the volatile Alcaline Salts, which are in ſo common uſe as to be frequently miſapplied.

I have been lead from the Matter in which I engaged, which was to find means of ſtopping the Contagion among the Cattle, into a Subject of much greater importance; for which I had made no kind of preparation by previous reading. I cannot therefore be ſuppoſed to have done Juſtice either to the Subject or to the Character of the Writer by ſo haſty a performance. But however I may have miſcaſt ſome ſmall particulars, I am well perſuaded that the Sum total is not far from the truth. I ſoon found that a bare Scheme calculated for the Cattle and unwarranted by Experience could not poſſibly gain Credit enough in the world to procure its Eſtabliſhment. Nor could I think of any other method by which I could propoſe to do my Country any conſiderable ſervice in this general Calamity. All the Phyſicians whoſe opinions I have ſeen in their writings, or by correſponding with them on the Subject, do unanimouſly aver that very great ſucceſs has attended an *Antiphlogiſtic* treatment in the beginning; they do alſo unanimouſly diſapprove, with all ſubmiſſion to their Superiors, of the deſtroying the Cattle as ſoon as ſeized, becauſe it de-

deprives us of all means of *Experience*. But their Authority has not prevailed on the Farmers to purſue the *Antiphlogiſtic* Treatment, inſtead of their own fanciful Attempts, as ſpreading Tar on their Hips, ſoaring up Garlic in their Ears, rubbing their Noſes with Spirit of Turpentine, Aſa fœtida, &c. Nor has the Government given them any aſſiſtance to make their Endeavours more effectual. And as they have themſelves told me they were diſcouraged by theſe diſappointments from perſiſting in their Endeavours, I could not flatter myſelf with better Succeſs by the ſame meaſures. The only way therefore I had left to purſue, was to take a view of the Peſtilential Diſeaſes of Mankind, where we have the benefit of the Experience of many Ages; and if I have been able to prove that thoſe Diſeaſes have always been ſtopt in no long time by a proper treatment, it follows that the ſame kind of Regulations eſtabliſh'd and executed with regard to the Cattle will, in all human probability, ſtop their Contagious Diſtempers alſo. That more eaſy part of my Taſk remains for me now to execute; after I have made ſome few Obſervations,

ſervations, by way of Compariſon, between the Diſeaſes of the Human Race, which I have already obſerved upon, and the Diſtemper now raging among the Cattle.

Tis highly probable that Kine are not liable to any diſeaſes of ſo violent and malignant a nature as the Human Species. And no Diſeaſe has ever appear'd among them that deſerves to be compared to the Plague among Mankind for malignity. Fear and Diſpair occaſion great dejection of Spirits, unbrace all the Springs of Life, and render up the Human Frame an eaſy prey to Contagion; and I am inclined to believe, that moſt acute Diſeaſes in their own nature and originally incurable, are ſuch as take their riſe from ſome impreſſions of the Mind upon the Body. From impreſſions of this kind, the nature of Kine is exempt; nor will the Blood of Animals feeding upon Graſs be liable to ſuch deleterious Putrefactions as thoſe which live upon animal food; to ſay nothing of that *Iliad* of Evils which Luxury and Intemperance have introduced among Mankind: The greateſt obſtacle to our treating the Diſtempers of Cattle is our ignorance of the nature of their

Diſtempers

Diſtempers. Repletion and Inanition are the ſame in all Animals; but an herbaceous food keeps their Blood in a depreſs'd State; their Salts are not exalted into ſuch an alkaline or highly animalized nature as the Human Blood is raiſed into by Animal Food. Their Putrefactions will therefore be of a different nature; and call for the aſſiſtance of different Medicines. But Experience will obviate all theſe difficulties, when men properly qualified to make Obſervations apply themſelves to theſe Enquiries; which will be greatly promoted by the opportunity of Experiments or Diſſections in any time of the Diſeaſe.

Should the preſent Diſtemper bear any Analogy to the Sweating Sickneſs, then the Cure may conſiſt in ſome obvious and ſimple treatment, when that is once diſcover'd. Or if like that Diſtemper it ſhould be liable to make frequent returns (which I have too great reaſon to dread may be the caſe) then will the Nation continue ſubject to returns of the ſame Calamity, without profiting by the Experience of our former Misfortunes.

But the affinity is certainly very great between the Peſtilential Sore-Throat and the

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preſent Diſeaſe of the Cattle; in confirmation of which I deſire the Reader to compare *Severinus*'s Account of the former with Dr. *Barker*'s and Dr. *Brocklesby*'s Accounts of the latter; both which Gentlemen have publiſh'd their own Obſervations independently made. I will here ſubjoin ſome Extracts from them, and to make the compariſon the more eaſy, the correſponding Symptoms from *Severinus* are printed in *Italics*.

There is a fullneſs of the Blood Veſſels of the Eyes and Head; a Tumour of the Glands of the Head and encreaſe of all ſerous diſcharges there; a frothy matter is diſcharged from the mouth and eyes, and purulent matter from the Noſtrils; an Inflammation of the cellular Membrane of the Skin in many parts of the body, particularly the neck and about the ſhoulders; the Blood-Veſſels of the Lungs are ſtuffed up and diſtended with grumous or coagulated Blood. The Lungs were in ſome of a livid, blackiſh colour, and putrified to ſuch a degree, ſoon after the cattle were dead, as ſcarcely to bear touching. Abſceſſes were found in the Lungs of others, and the *Aſpera Arteria* generally

generally contain'd a great quantity of yellow concocted Phlegm, ſuch as is uſually ſpit up in *Pulmonic* Caſes, or a frothy *Mucus*; and the Tonſils were oftentimes inflamed or impoſthumated. Some of the Cows have run mad. The diſtemper is of various length, ſome die in three or four days from the diſcovery of their Illneſs, ſome linger twelve or fourteen; but the moſt uſual period mentioned both by Dr. *Barker* and Dr. *Brocklesby* is *ſeven* days.

The Ulcers of the Tonſils are mention'd by Dr. *Barker* only; nor did they conſtantly attend the Diſeaſe of the Children, for *Severinus* expreſly obſerves their not being found in the Youth he diſſected; and I underſtand him to mean the ſame of another Youth.

No Author I have met with mentions a *Diarrhœa* as naturally ſpringing up in the Diſeaſe of the Youths; but all adviſe Purging as a relief to nature. In the Kine a Looſeneſs comes on ſpontaneouſly, and Dr. *Brocklesby* declares that all who had it not before the third day died; but I have been informed of inſtances where the contrary was obſerved. The herbaceous food of

Kine keeps them conſtantly lax, a looſeneſs is therefore very familiar to them, and in this caſe would probably be very beneficial, if the Acrimony of the Humours could be ſo far moderated as to prevent its mortifying the Bowels.

No Symptom ſeems more particularly to be inſiſted upon in this Diſtemper of the Kine, than their abſtaining from Food and ceaſing to *chew the Cud*; but by the beſt Information I could procure from perſons converſant among Cattle, that is no more than a general Symptom of any Indiſpoſition whatever.

From the foregoing Obſervations I may venture to fix a name on the preſent Diſtemper of the Cattle, that it is a *Gangrenous, Contagious Peripneumony*; and 'tis remarkable that in *Severinus*'s time, the year before this Diſtemper ſeized Mankind, a Contagion fell among the Kine, in which they were wonderfully ſtrangled and would ſuddenly drop down dead.

This Contagious Diſtemper being ſeated in the paſſages of Reſpiration muſt, as I before obſerved, ſtrongly propagate its Infection; and therefore requires the ſtricteſt

care

care to prevent it. In winter great numbers of Cattle are kept in the ſame yard and lodge in the ſame houſe; great quantities of Hay and Fodder are kept over their heads, ſuſtained only by Boughs; this is a material very fit to receive and retain Infection. Cotton will carry Infection from *Turkey* to any part of *Europe*; and rags taken out of a wall, ſeveral years after they were hid, have infected the perſons who found them.

It cannot be expected that Farmers will become Critics in the Diſtemper; it muſt therefore be ſuppoſed, that the firſt Beaſt, which is ſeized in any place, will advance far in the Diſtemper, before it is known, and conſequently that he will have infected one ſet of Cattle, ſuppoſe five, before he is killed and removed; and if it be in the winter and he be houſed, he will have infected the Houſe and a large quantity of Fodder; we muſt alſo ſuppoſe that after he is kill'd, there will remain a great uncertainty about his Diſtemper, and various conjectures about the Cauſe of his Death; for the neighbourhood often think it their Intereſt to conceal it: and therefore very little precaution will be taken to prevent ſpreading the Infection,

till the ſecond ſet of Cattle are alſo far gone in the Diſtemper and give the Alarm. This Farm is now become a center of Contagion, and let us conſider what danger the Country is in of being infected from it.

The Cattle of the firſt farm muſt be ſuppoſed to drop one after another; and the intercourſe of people out of neceſſity or curioſity will probably carry the Infection to ſeveral other Farms; nay theſe perſons do alſo go to Fairs and Markets and ſo infect the country far and wide. But the Malady does not ſtop here; perhaps ſix months or longer after the Infection is ſtopt in any place, it ſhall break out again among a new ſet of Cattle, upon the uſe of Fodder formerly infected, or putting them into the infected Houſes. The Hiſtory of the Infection muſt determine how far this is agreeable to facts. It is commonly ſaid that Grounds have remained infected a long time. I ſhould think that the winds and the rains would in no long time waſh Infection out of Grounds; but a Farm-yard is full of materials fit to receive and retain Infection.

On theſe reaſons I have grounded my apprehenſions, leaſt the Country ſhould continue

tinue ſubject to the revival of the Infection for many years, by its breaking out every winter, when the old Fodder comes to be ſtirr'd. Perhaps the Infection of the Small-Pox has not at this time ſtronger hold of the different parts of the Kingdom than the Diſtemper of the Cattle, the great Cities excepted. And if we had not greater advantages towards ſtopping an Infection among Cattle than among Mankind, the ſtopping the Contagion at all were a thing almoſt to be deſpaired of.

The violence of the Infection gave occaſion to the Order for deſtroying immediately all the infected Cattle. But I have ſhewn that this method will not eaſily be made effectual in our preſent circumſtances. The difficulty of executing any Orders of State, againſt the bent of the People, and the judgment they form of their own Intereſt, is well known. The Graſiers have many Examples of the far greater part of a Herd recovering when left to Nature only; and they do with great reluctance comply with this order, which they think muſt occaſion their own ruin, with a view to the public good, which they do not underſtand, or

perhaps

perhaps are not much influenced by. The allowing them the full value of the Cattle to be killed, and immediate payment in the Country, would make them more ready in compliance. But this will leave a door wider open for Frauds, at which I fear too many do at preſent enter. The great Sums paid for the Cattle killed are a heavy burden to the State; but the loſs of the Cattle themſelves, the property and real wealth of the kingdom, their Fleſh, Hides and Tallow, which muſt all be ſupplied from abroad, together with the great diminution of the Breed, is a loſs that will be ſeverely felt for many years to come; and which all Perſons how remote ſoever their Intereſt with the Country may be, muſt bear a ſhare of. But the great burden lies upon a body of People, the moſt neceſſary to the State, already ſuffering under great diſtreſs, by whoſe labour is ſuſtain'd all the affluence, eaſe and luxury of the *Great*.

If this be the true ſtate of the caſe, no Care or Expence will be thought too great in order to eradicate totally the Diſtemper from among us; and it is not now to be eradicated without great Care and Expence.

With

With this view I preſumed to recommend the Eſtabliſhment of *a Board of Health*, conſiſting of Perſons the beſt qualified to form the moſt convenient Regulations, and to take effectual Care to enforce their Execution. In this Board all Orders of Men have their repreſentatives, and there is room for each to exert themſelves in this Service. If the nation has not upon late occaſions been able to exert its full ſtrength, as that reſults from union, there is reaſon to hope for better ſucceſs in the preſent caſe, in which all parties are equally united by intereſt. And this occaſion, properly improved, may in ſome degree contribute to extinguiſh that unnatural party animoſity by which the internal Peace and Proſperity of the Kingdom is cruelly diſturbed; and which it is the duty of all true *Britons*, all Friends of their Country conſtantly to diſcourage and ſuppreſs.

If a neglect of Order and diſobedience to Government be one Evil Spring that gauls our Country; no time is ſo proper to cut off thoſe poiſonous waters and to direct their ſtream into their natural channel, as a time of general calamity, when Providence ſeems to call us all to Obedience. And whatever

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may be laid to the Charge of the Corruption and Depravity of a People, yet their Governors and Inſtructors muſt not only partake of the preſent Diſtreſs, but may perhaps finally bear the blame of diſobedient Children or People.

Let us not pretend to magnify in ſpeculation the excellence of our Conſtitution, if we cannot ſhew it forth in practice, by making it the means of repelling all National Calamities, and ſecuring the enjoyment of all National Good. To ſay that good Laws cannot be enforced among us, what is it leſs than admitting that *Government* itſelf fails of its End?

Pudet hæc opprobria nobis
Et dici potuiſſe, et non potuiſſe refelli!

for then muſt this antient and noble *Gothic* Structure raiſed by the Labour, and cemented with the Blood of our Anceſtors, fall to pieces and bury their Children in its ruins.

But I truſt that Providence intends to lead us thro' Calamities to a better Fate; that the great God of Order, the Director of King-

Kingdoms will not ſuffer this Nation, the Seat of Learning and Liberty, (and in which at leaſt more traces of genuine Chriſtianity are ſeen than in all the world beſide) to be involved in Darkneſs, Anarchy and Confuſion.

It is the duty of Governors to form wiſe Laws and enforce their Execution. It is the duty of the people to yield a ready Obedience to thoſe Laws. And after making uſe of the liberty, indulged by our mild Government to its Subjects, of propoſing my own Sentiments, I ſhall myſelf ſubmit to the wiſdom of my Superiors, and whenever the Diſtemper appears upon my own Eſtate, my own Cattle, and thoſe of my Tenants, ſhall be ſubmitted to the Orders of the Government, how contrary ſoever to my own Opinion.

But to return from this Digreſſion; I will at preſent cloſe the Subject with ſome Obſervations I would ſubmit to the Conſideration of the Medical part of this *Board of Health*.

There is a general Agreement in the Hiſtory of the Diſtemper given us by Dr. *Barker* and Dr. *Brockleſby*; but they differ in

ſome particulars; and in the few Accounts I have been able to pick up, I have been informed of ſeveral Caſes which differ'd from both. There are great varieties in the form of all Diſtempers according to the Seaſons, much therefore remains to be done to illuſtrate the Hiſtory of this, when a careful Collection of Facts are made by the Board of Health from all parts of the Kingdom. A judicious treatment of the Sick might now be directed, a better would ſoon be eſtabliſh'd; but what is of much greater importance, to be learnt, is an early application of it either in the latent Stage of the Diſeaſe, or in the preparative treatment of all Cattle within reach of the Contagion.

The early ſeparation of the Sick from the Sound and the keeping the ſuſpected in a place of Quarantine is the method which has always proved effectual in ſtopping the Plague. This method may more eaſily be put in Execution for the Cattle than for Mankind, as their Paſſions are herein leſs concern'd, and their Intereſt engages them on the right ſide. The Summer is the proper Seaſon for the execution of this regulation, as the expence of Barracs will then be

ſaved.

ſaved. Yet Herds ſuſpected of Infection ſhould never be permitted to remain in Farm Yards and Beaſt houſes in any Seaſon, but be diſperſed in the Fields or put into Barracs.

This regulation cannot be executed by the Farmers themſelves. But whenever the Infection has ſeized a Village, I think a proper piece of Ground ſhould be pitched upon and a Barrac of Boards erected at ſome public Expence, into which all Cattle as ſoon as the diſtemper appears ſhould be removed under the care of Perſons appointed for that purpoſe, who ſhould continue with them the whole time, and no other Perſons be permitted to come near them. By this means and by keeping a double line of Hedges with void Ground between, the Infection will be confined to one Spot, for ever ſo long a time; and when all danger is over, the Barrac may be taken down, the dung ſpread in wet weather, plow'd in by Horſes, the Field ſown, and no Cattle permitted to tread on it for as long a time as is judged convenient.

It has been the uſual practice to burn the Barracs after the Plague for the greater Security: But I am myſelf of opinion that fu-

ming the boards upon a Kiln with a fire of green boughs of Oak, Firr, or any Vegetable known to abound in an Acid Juice, and ſcorching the Surface a little will always be ſufficient to deſtroy their Infective Quality.

I alſo beg leave to propoſe the following as an *Experimentum Crucis* to determine whether Contagion can or cannot be ſubdued in any Subject.

Let a Beaſt paſs thro' every Stage of his Diſtemper and die in the moſt putrid State. Let his Hide be taken off and placed in a Kiln properly contrived, in which the fumes of a pound or two of common Sulphur ſhall be made to paſs around it, in as confined a manner as poſſible. I am not afraid to acknowledge it as my own opinion, that no Infection will remain in that Hide, and that it might be ſafely laid in a field among a hundred Cattle.

'Tis well known in Chemiſtry, that Sulphur abounds with the Vitriolic Acid, which is thrown off by fire in a moſt ſubtile penetrating form, which has from *Van Helmont* been called Gas. It diffuſes itſelf violently thro' the Air, and by its ſtrong ſuffocating property would kill an Animal that makes

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but a ſingle full Inſpiration of Air highly impregnated with it. It differs not from the volatile Spirit of Vitriol I before mentioned.

This Experiment might be tried with no great Expence or danger, and I am inclined to think the Hides of the Cattle who die of the diſtemper might by this means be ſafely preſerved, if it would not give Occaſion to frauds.

The ſame method might be applied with great advantage to fumigate infected Bales of Cotton or ſuch Goods, which will not only be more effectual than a very long expoſure to the Air; but alſo be much ſafer to the Men who are to attend the Service of Quarantines, and who are obliged to thruſt their naked Arms into the Bales in order to expoſe the ſeveral parts to the Air. And if by this means any of them ſhould take the Diſtemper, a great danger is incurr'd of reviving a latent Infection and giving it a chance of becoming general.

A very exact Method of Purification is alſo to be enforced for the Beaſt Houſes and Farm yards where infected Cattle have been kept. The preſent is the proper Seaſon of the Year for this work, and the preſent year does

does very providentially favour it. The long Winter has consumed the Fodder, except where the Stock has been much diminish'd by the Distemper. I will not descend into the particulars necessary in this Service: but only observe, that this work is not to be entrusted to the prudence or care of the Farmers themselves, since by the negligence or unskilfulness of a single Person, the Country may be exposed to a revival of the Infection.

As this various Service requires persons of Skill to direct it, the Pupils of Physic and Surgery in the several Hospitals might be properly instructed by the Board of Health, and sent to execute their Orders in the several infected Countries, where such Persons are wanting, and to give the board a regular account of the State of the Infection and of their own proceedings. Their assiduity and Skill in serving their Country on so important an Occasion cannot fail of recommending them to many Advantages in their professions.

I am myself fully persuaded, that if this general Polity be once establish'd thro' the Kingdom; the Sick early separated from the

Sound,

Sound, and both properly treated, and all materials capable of harbouring Infection removed and purified; that the Kingdom might in a few months time be cleared of the Diſtemper. Nor can any ſtronger proof be deſired of the reaſonableneſs of theſe Methods, than their having always been found ſufficient to ſtop the progreſs of the Plague. One more example of which I will extract from the Book I have been already ſo much obliged to, Dr. *Mead*'s Treatiſe on the Plague, Book II. Chap. 2.

The Plague was brought to *Eham* a Village in the Peak of *Derbyſhire* by a Box of Goods ſent from *London* to a Taylor there. The Servant who opened the Box and aired the Goods at the fire was firſt ſeized with the *Plague* and died. The ſame misfortune extended itſelf to all the reſt of the Family, except the Taylor's Wife, who alone ſurvived. From hence the Diſtemper ſpread about, and deſtroyed in that Village and the reſt of the Pariſh, tho' a ſmall one, between two and three hundred Perſons. But notwithſtanding this ſo great Violence of the Diſeaſe, it was reſtrain'd from reaching beyond that Pariſh by the care of the Rector.

Rector. This Clergyman adviſed that the Sick ſhould be removed into *Hutts* or *Barracs* built upon the Common; and procuring by the Intereſt of the then Earl of *Devonſhire*, that the People ſhould be well furniſhed with Proviſions, he took effectual Care that no one ſhould go out of the Pariſh; and by this means he protected his Neighbours from Infection with compleat Succeſs.

April 20,
1748.

F I N I S.